

## CLAIMS

1. A control unit for an internal combustion engine that:

detects, using a sensor that is located on a downstream side of a throttle valve

5 on an air intake passage of the internal combustion engine, an air flow rate that is taken into the internal combustion engine;

calculates an injection quantity of fuel based on the air flow rate; and

outputs a signal to an injector of the internal combustion engine such that this injection quantity of fuel is injected, wherein

10 the injection quantity is calculated using a value obtained by multiplying a predetermined constant by an integral value that is obtained by integrating from the start of an air intake until a peak value is reached the air flow rate that increases as an intake stroke of the internal combustion engine progresses as a total integrated value of the air flow rate of that intake stroke.

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2. The control unit for an internal combustion engine according to claim 1, wherein the predetermined constant is 2.

3. A control unit for an internal combustion engine that:

20 detects, using a sensor that is located on a downstream side of a throttle valve on an air intake passage of an internal combustion engine, a flow rate of air that is taken into the internal combustion engine;

calculates an injection quantity of fuel based on this air flow rate; and

outputs a signal to an injector of the internal combustion engine such that this

25 injection quantity of fuel is injected, wherein

an integral value of the air flow rate that increases as an intake stroke of the internal combustion engine progresses is calculated until the air intake ends, and during a period from the start of the air intake until the end of the air intake, an injection quantity of fuel is determined based upon the integral value at regular predetermined times, and a signal is output to the injector such that the injection quantity matches an accumulated value from the start of the air intake.